# SCIENTIFIC AMERICAN.

THE ADVOCATE OF INDUSTRY AND ENTERPRISE, AND JOURNAL OF MECHANICAL AND OTHER IMPROVEMENTS.

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THE SCIENTIFIC AMERICAN,
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RUFUS PORTER,—Editor.

Each number of this paper is furnished with from two to five ORIGINAL ENGRAVINGS, many of them elegant, and illustrative of NEW INVENTIONS, SCIENTIFIC PRINCIPLES, and CURIOSITIES; and contains as much Interesting Intelligence as six ordinary daily papers, consisting of notices of the progress of Mechanical and other Scientific Improvements,—American and Foreign Inventions Catalogues of American Patents,—Scientific Essays, illustrative of the principles of the Sciences of MECHANICS, CHEMISTRY, and ARCHITECTURE;—Instruction in various Arts and Trades;—Curious Philosophical Experiments;—Miscellaneous Intelligence, Poetry and, occacionally, Music.

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TERMS OF ADVERTISING.—For 10 lines, or less, 50 cents for the first, and 12 1-2 cents for every subsequent insertion.


## Song of the Editor.

Sit! sit! sit!
From the matin hour till twilight gloom,
He's a "fixture" there in his dusky room,
Away the moments flit,
And the world outside, with joyous din,
Moves gaily on—but the world within
As labor toil and care!
No turn knows he in the weary day
But the turn that shows the pivot's play,
As he turns his easy chair!

Think, think, think!
In the smith's bright forge the fire glows,
But the smith himself the bellows blows
Unheard the hammer's clink,
Not so the fire that lights the brain
Of him who wears the GALLEY chain,
Or makes the PRESS-gang go!
He must flash with light and glow with heat,
With quill in hand his brains must beat—
But never indulge a BLOW.

Write, write, write!
Though fancy soar on tired wing,
She must still her tribute celestial bring
Nor own a wearied flight,
And Reason's powers, and Memory's store,
Must prove their strength, and bring their lore
Antique, and sage, and mystic;
For these to the utmost thought and particle,
Must go on to-morrow's "leading article"
Of argument—wit—statistic.

Clip, clip, clip!
No "cabbaging" shears his hand doth hold
But those with which the current gold
By lawful right he'll clip—
The devil is gone, but he will not fail
Of a prompt return with the morning mail,
A basket full of "EXCHANGES"—
And then the editor opens and skims—
Accidents—deaths—discoveries—whims—
As over the world he ranges.

Paste, paste, paste!
With a camel's hair brush and broken cup,
He gathers the scattered fragments up,
And sticks them on in haste;
The devil appears, with a grin and a bow;
"Please, sir, they're waiting for copy now,"
He says in accents solemn—
"The foreman thinks he'll soon impose
The outside form with scraps and prose,
And the LEADER may be a column!"

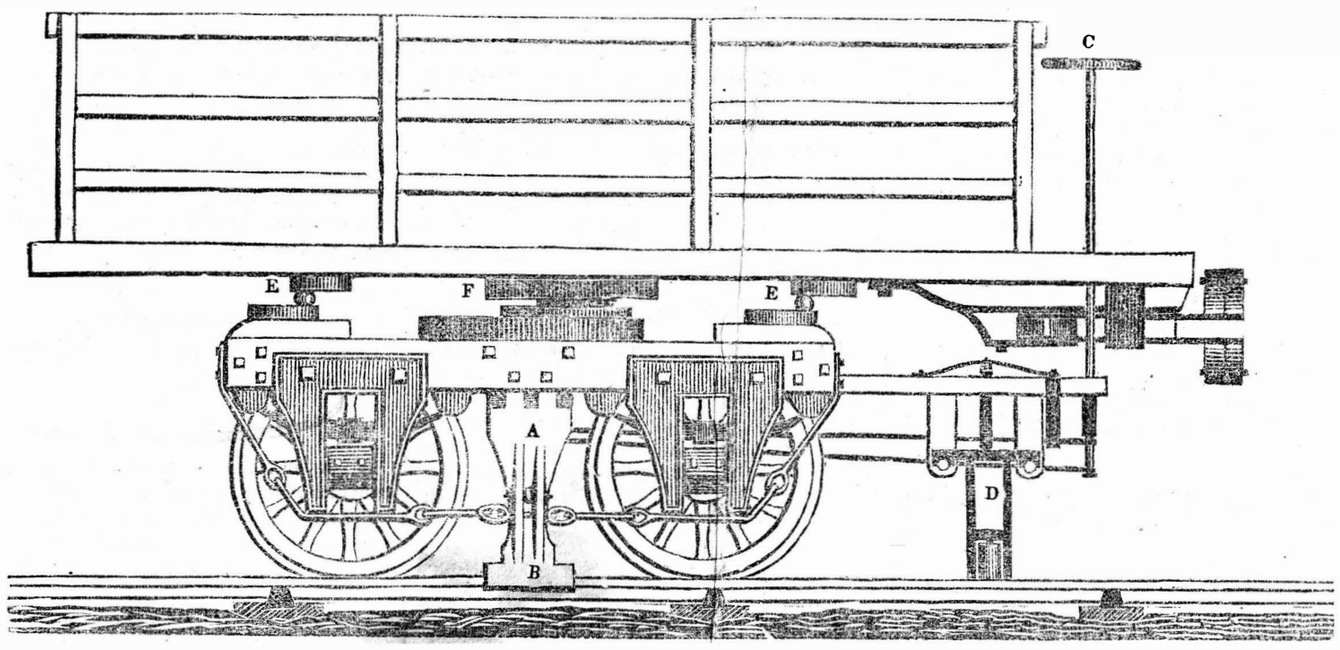
Pay, pay, pay!
The "work" is done on Saturday night,
And bounds with a step of pure delight
To his wife and babies away;
But round the Editor see a score
Of honest "jours" who tease him sore—
And may he be unheedful—
Tho' bright is the wit that can furnish there
The MEANS to relieve them all from care
By shelling out the "needful."

## The Kings of England.

First William the Norman, then William, his son;
Henry, Stephen, and Henry, then Richard and John;
Next Henry the Third, Edwards, one, two and three,
And again after Richard, three Henrys we see;
Two Edwards, third Richard, if rightly I guess,
Two Henrys, sixth Edward, queens Mary and Bess;
Next James of Scotland, and Charles whom they slew,
And next, after Cromwell, another Charles too;
Next James the Second ascended the throne,
And William and Mary together came on;
'Till Anne, three Georges, fourth William, all past,
Then cometh *Victoria*, may she long be the last.

IRISH STRING BEANS.—Our Gloucester correspondent, in one of his letters, relates a pretty little anecdote, running somewhat in this wise:—A lady in that town directed her servant (a young woman lately from Ireland) to prepare for dinner a quantity of *string beans*, a dish well known in New England, though not so common out of it, prepared by boiling a certain kind of beans together with pods, when about half grown. The poor girl not being familiar with the dish, took a needle and strung upon threads about a quart of common white beans, boiled them and placed them on the table. Mrs. ——'s strin beans are a standing joke in Gloucester.—*Eagle.*

# H. F. PENFIELD'S IMPROVEMENTS.




EXPLANATION, ETC.—The several bold and important improvements projected by this gentleman, are not yet completed, but as they embrace several principles which had not been introduced when we noticed his improvements in a former number, we have procured this cut, representing the experiment loco-stative, as it now appears. It should be understood however, that some of the peculiarities in this machine, are more particularly calculated for eight-wheeled cars, but will answer for either. In this engraving, the car is represented as being held fast by two opposite pairs of clamps, one of which appears at A; each pair are united by a strong hinge joint, at the top, and the jaws thereof, B, clasp the two sides of each rail at the bottom. Each clamp is supported fore and aft by chains; and they are so arranged and connected, one part with another, that by means of the motion,—rotary and vertical,—of the hand-wheel C, these clamps may be opened or closed, elevated, or depressed, at pleasure. The ordinary position of the clamps is so far elevated as to be safely above the rails; but when their use is required, the hand wheel and shaft are depressed, which, operating on a pair of horizontal levers, (not fully represented in the engraving,) causes the depression of the clamp; and by turning the hand-wheel, another pair of levers are made to operate on each pair of clamps, pressing the jaws thereof against each side of each rail, with any required degree of force. Another point of improvement consists in the construction and adjustment of a pair of vertical guide-cylenders D, which being placed nearly in contact with the inside of each rail, tend to guide the truck in a steady straight-forward direction, and by the peculiar connection of these guides to the frame-work above, they will readily rise and clear themselves from any permanent object that may come in their way. A third improvent consists in the peculiar mode of connecting the car-body to the trucks. From concave circular plates E E, are secured on the four corners of the truck frame, and four other reversed plates are attached to the body and partly over the first; and an iron ball is placed within the concavity of each pair of plates, and these balls support the weight of the car body; but by rolling within the concaves allow a free lateral motion of either the car body or truck. The principal connection is central near F, and consists of three circular plates, one of which is firmly attached to the truck; another to the car body, and a third is placed between the other two, and is connected to each by a strong pivot; the two pivots which connect the centre plate to the bed and cap plates, being about five inches apart, thus allowing an eccentric motion. To give a full and minute description of these peculiarities would require more space than we can at present devote to the subject, besides several sectional engravings, but when the improvements are completed and applied to a double car, we shall give a description more perfect.

HARD WORDS.—When in the act of composing a sermon, an English clergyman made use of the term "ostentatious man." Throwing down his pen, he wished to satisfy himself, ere he proceeded, as to whether a great portion of his congregation might comprehend the meaning of the said term, and he adopted the following method of proof. Ringing the bell, his footman appeared, and he was thus addressed by his master: "What do you conceive to be implied by an ostentatious man?" "An ostentatious man, sir!" said Thomas: "why, sir, I should say, a perfect gentleman." "Very good," observed the vicar: "send Ellis (his coachman) here." "Ellis," said the vicar, "what do you imagine an ostentatious man to be?" "An ostentatious man, sir!" replied Ellis: "why I should say an ostentatious man means what we calls, saving your presence, a real jolly fellow!" We need scarcely add, that the vicar substituted a less ambiguous word, the schoolmaster not having been at the time abroad.

THE FINE ARTS.—Drawing and painting, where a good taste is manifested, are truly elegant accomplishments for a lady. They teach more of humanity, and open to her more beauty in nature, as well as harmony in life, than can any other single acquirement. The productions of her pencil have a double value! they teach her to admire and imitate that which is good, and by being presented to others tell them to go and do likewise. When properly instructed, a female artist need never lack for amusement, but may become a joy to herself and her kindred forever. Her song may become silent through care, and matronly duties will take the lightness from her step, but the charmed work of her hand shall continue in its beauty through all time. They exist when her creating fingers have lost their action; when her imaginings can portray no more. They become relics of surpassing value, and are cherished as love tokens of her who cannot altogether depart so long as these memorials of her skill delight the eye.

ERUPTION OF MT. HECLA.—Letters from Keixjavik, in Iceland, state that on the 9th of March an eruption of great violence took place. The flames burst forth by three immense craters, and reached to the height of more than 2500 *brasses* (15,000 feet). The lava poured forth from the tops of the mountain, and pummice stones were thrown to the distance of three quarters of a mile, some of which weighed 480 kilogrammes, or about 100 pounds.—In consequence of this eruption, the enormous mountain of snow and ice, piled up on the sides of Mount Hecla, were melted, and swelled the waves of the river Kangea, which flows at the foot of this volcano. The waters of this stream were so heated by the torrents of red hot lava that poured into it, that, day by day, they picked up on its banks quantities of trout dead and even cooked. The cattle that eat the grass upon which the ashes fell, have been attacked with an epidemic from which few have escaped.

BEST IMITATION OF GROUND GLASS FOR WINDOWS.—Select some of the most purely transparent lumps of gum copal, and reduce them to a fine powder. Spread a thin coat of copal varnish diluted with spirits of turpentine, over one surface of the glass, and when it has become a little hard, sprinkle over it the powdered copal till the varnish is covered, and press it down gently with a ball of cotton or flannel; or if the position of the glass is vertical, dip a ball of flannel in the powder and apply it to the varnish till the surface is covered.—When the varnish is thoroughly dry, brush off a part of the powder with a stiff brush, observing to brush uniformly in one direction. Then if any lines, figures, or flowers are to appear transparent, the powdered varnish may be scraped off from such parts with the edge of a small chisel. This work will bear washing, and each particle of the powdered gum being transparent, none of the light which would ordinarily pass through the glass, will be obstructed.

A MARRYING MAN.—A good joke is told of a bigamist, in North Carolina. He had married his *thirteenth* wife, without waiting for any of them to die off as the law directs, when some of his first loves came down on him, and had him safely lodged in jail, for breaking their hearts. Our hero, however, soon managed to break jail, and was again at large, but being recognized by a man who was anxious to obtain the handsome reward offered for his arrest he invited the bigamist to accompany him home, and called in his wife to chat with him, while he went for an officer to take him. On returning with the constable shortly after, what was the poor man's astonishment to find that the gay Lothario had *absconded with his wife.*

RISK OF MERCANTILE LIFE.—Gen. Dearborn, in a lecture delivered before the farmers of the Massachusetts Legislature, declared that ninety-seven out of every one hundred persons who obtained their livelihood by buying and selling, *failed*, or died insolvent. This fact he ascertained by reference to the books of the Custom-house, the Banks, the Probate office, and from the recollections of the oldest merchants. Gen. Dearborn declared that 'he would prefer a cottage in the country, with five acres of ground, to the most splendid palace that could be erected in the city, if he must depend upon the success of merchandize to support it.'

STOCKINGS.—One would suppose that we made our own stockings or hosiery in the United States: but with all our knitting and wearing we do not.—According to the tables made out in England in 1841, there were sent from England to the United States, 115,318 dozens of hosiery. In 1842, 78,086 dozens. In 1844, 101,231 dozens. In 1845, 78,792 dozens; making, in five years, *four hundred and forty-three thousand, nine hundred and sixty-eight* (443,968) dozens of stockings and socks brought from England to the United States. How many come in from other countries we do not know.

DANCING AND SWIMMING.—A German Journal remarks that among the curiosities of Vienna may be reckoned, without contradiction, the great hall called the 'Sophia Hall,' which has recently been opened, and the rich decorations of which have attracted the admiration of the public. It is made to serve, according to the season, for a dancing hall, or for bathing rooms, and a swimming school, with an immense basin, capable of holding a thousand hectolitres of water. In winter, five hundred couples of dancers, and three times as many spectators, can move about in it without difficulty. What is more remarkable is, that but seven hours are required to transform the swimming hall into a ball room.

PATENT DEFINITIONS.—*Debates.*—A useless wagging of tongues, where the noses have already been counted.

*Ditch.*—A place in which those who have taken too much wine, are apt to take a little water.

*Doze.*—A short nap, enjoyed by many people after dinner on a week day, and after the text on Sunday.

*Egotism.*—Suffering the private *I*, to be too much in the public *eye*.

*Jealousy.*—Tormenting yourself, for fear you should be tormented by another.

*Marriage.*—Taking a yoke-fellow, who may lighten the burden of existence, if you pull together, or render it unsupportable, if you drag different ways.

DEPRECIATION IN THE PRICE OF MINERAL.—The St. Louis New Era of the 5th says, "We are informed by a gentleman from the mining regions of Dubuque and Galena, that owing to the low price of lead, and the full state of the market here and elsewhere, lead ore has gone down to almost nothing. It was offered when he left, at seven dollars per thousand pounds, and could not be sold. Three weeks since, at the same mines, it was selling for sixteen dollars per thousand."

A REMARKABLE HORSE.—Mr. John Wales, of North Bridgwater called at our office last week and showed us a horse that was in his thirty-sixth year. This horse came in from North Bridgwater, twenty miles, bringing four persons, in four hours. He is yet a good traveller, and does much labor.—*Mass. Ploughman.*

DESCRIPTION.—A late writer says, that if you would have an idea of the ocean in a storm—just imagine ten thousand hills and four thousand mountains, all drunk, and chasing one another over newly ploughed ground with lots of caverns in it for them to step into now and then.

INCREASING.—England seems bent on outdoing the world in the way of a navy. She has now building 100 ships of war, among which are no fewer than 35 steam frigates and other war steamers; four 36-gun frigates; ten 50-gun frigates, and ten ships of the line, averaging from 80 to 84 guns each.

## The House that Zack. Built.

FORT BROWN.
This is the house that Zack. built.

THE CANNON.
These are the bull dogs that lay in the house that Zack. built.

THE GARRISON.
These are the men that fed the dogs that lay in the house that Zack. built.

GEN. TAYLOR.
This is the General as sharp as a thorn, that led the men that fed the dogs, that lay in the house that Zack. Built.

GEN. ARISTA.
This is the leader that rose in the morn, to meet the general as sharp as a thorn, that led the men that fed the dogs that lay in the house that Zack. built.

THE MEXICAN TROOPS.
These are the troops all tatterd and torn, that followed the Leader that rose in the morn, to meet the General as sharp as a thorn, that led the men that fed the dogs, that lay in the house that Zack built

CAPT. MAY, OF THE DRAGOONS.
This is the Captain not shaven or shorn, that charged the troops all tatterd and torn, that followed the Leader that rose in the morn, to meet the General as sharp as a thorn, that led the men that fed the dogs, that lay in the house that Zack. built.

GEN. VEGA.
This is the prisoner all forlorn, that was taken by the Captain not shaven or shorn, that charged the troops all tatterd and torn, that followed the Leader that rose in the morn, to meet the General as sharp as a thorn, that led the men that fed the dogs, that lay in the house that Zack. built.

THE MEXICAN ARMY.
These are the men all weary and worn, that abandoned the prisoner all forlorn, that was taken by the Captain not shaven or shorn, that charged the troops all tatterd and torn, that followed the Leader that rose in the morn, to meet the General as sharp as a thorn, that led the men that fed the dogs, that lay in the house that Zack. built.

THE AMERICAN ARMY.
These are the Yankees American born, that defeated the men all weary and worn, that abandoned the prisoner all forlorn, that was taken by the Captain not shaven or shorn, that charged the troops all tatterd and torn, that followed the leader that rose in the morn, to meet the General as sharp as a thorn, that led the men that fed the dogs, that lay in the house that Zack. built.

THE PRESS.
This is the press with its newsman's horn, that told of the Yankees American born, that defeated the men all weary and worn, that abandoned the prisoner all forlorn, that was taken by the Captain not shaven or shorn, that charged the troops all tatterd and torn, that followed the leader that rose in the morn, to meet the General as sharp as a thorn, that led the men that fed the dogs, that lay in the house that Zack. built.—*Danvers Courier.*

## The Best Peach.

The mother went out and brought in some peaches; a few of which were large, red-cheeked rare-ripes—the rest small ordinary peaches. The father handed me one of the rare-ripes, gave one to the mother, and then one of the best to his little daughter, who was eight years old. He then took one of the smaller ones, and gave it to Lydia, and told her to go and give it to her brother. He was four years old. Lydia went, and was gone about ten minutes. and then came in.

'Did you give your brother the peach I sent him?' asked the father.

Lydia blushed, turned away, and did not answer.

'Did you give your brother the peach I sent him?' asked the father again, a little more sharply.

'No, father,' said she, 'I did not give him *that.*'

'What did you do with it?' he asked.

'I ate it,' said Lydia.

'What! Did you not give your brother any?' asked the father.

'Yes I did, father,' said she, 'I gave him mine.'

'Why did you not give him the one I told you to give?' asked the father, rather sternly.

'Because, father,' said Lydia, 'I thought he would like mine better.'

'But you ought not to disobey your father,' said he.

'I did not mean to be disobedient, father,' said she; and her bosom began to heave, and her chin to quiver.

'But you were, my daughter,' said he.

'I thought you would not be displeased with me, father,' said Lydia, 'if I did give brother the biggest peach;' and the tears began to roll down her cheeks.

'But I wanted you to have the biggest,' said the father; 'you are older and larger than he is.'

'I want you to give the best things to brother,' said the noble girl.

'Why?' asked the father, scarcely able to contain himself.

'Because,' answered the dear, generous sister, 'I love him so—I always feel best when he gets the best things.'

'You are right my precious daughter,' said the father, as he fondly and proudly folded her in his arms. 'You are right, and you may be certain your happy father can never be displeased with you to give up the best of everything to your affectionate little brother. He is a dear and noble little boy, and I am glad you love him so. Do you think he loves you as well as you do him?'

'Yes, father,' said the girl, 'I think he does; for when I offered him the largest peach, he would not take it, and wanted me to keep it; and it was a good while before I could get him to take it.'—[A kiss for a blow.

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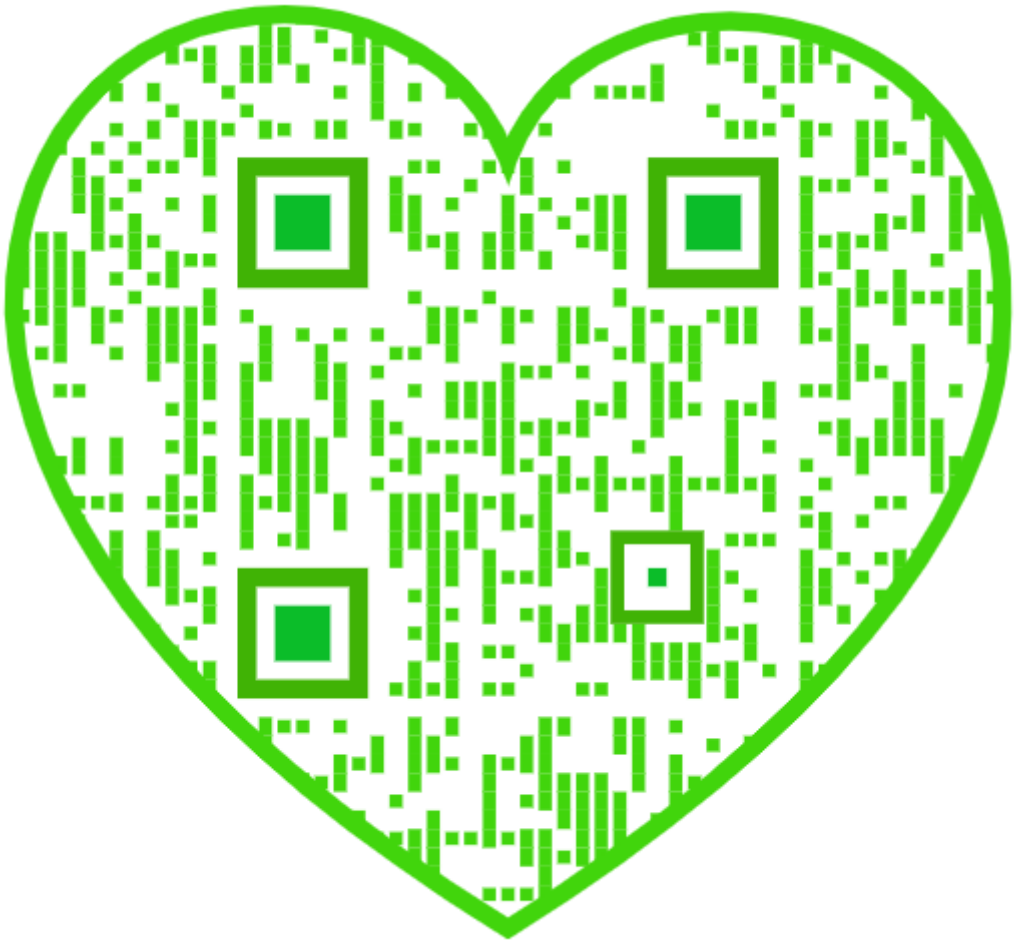
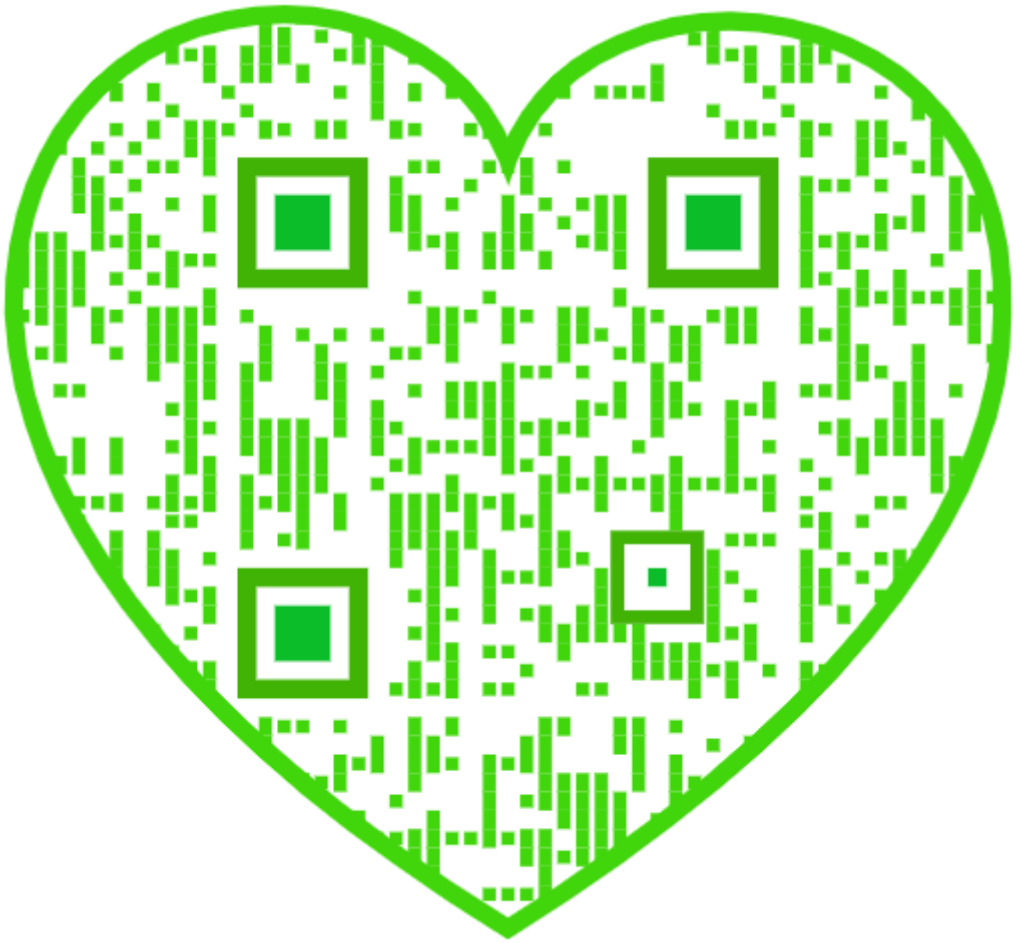




SCIENTIFIC AMERICAN

NEW-YORK, THURSDAY, JULY 16.

Drawings of machinery, engraving on wood, and lithographic drawings, neatly executed, at the lowest prices, at this office.

POST MASTERS—Who receive this paper, will confer a special favor by mentioning the subject occasionally to scientific mechanics. The aid, also, and influence of all our kind patrons, in extending the notice and circulation of this paper, is most respectfully solicited.

## Chemical Phenomena.

We have observed in several places in the country the evident effects of an invisible acid, or corrosive gaseous vapors. In the town of Lebanon, N.H., there is a form on which, as on most other farms in that State, there is an abundance of granite rock: but in one section over which the road passes, we observed that a granite ledge had become decayed, and crumbled off to dust. At a short distance from this the heavy stone walls which bounded the sides of the road were decayed, and in one place had crumbled to a heap of earth; and for several rods one side of every stone—the side towards the path-way—was more or less affected.

In Somerset, Mass., having some business with a Quaker gentleman, who was both farmer and mechanic, we noticed that the glass of the windows of one side of his shop were corroded to the depth of half its thickness, and was thereby rendered rough and opaque. On enquiring of the gentleman on the subject, he could give no reason for it, but called our attention to the windows of one side of his dwelling house, which was still more corroded and nearly ruined. We could account for it only by supposing that there was a quantity of fluoric acid in the earth near, from which proceeded an emission of gas sufficient to corrode the glass.

We are particularly reminded of these circumstances at this time by seeing an account, in an exchange paper, of two dark spots of earth on a farm in Chenango Co., N.Y. These spots are 30 or 40 feet in diameter, and in the midst of a field abounding with small stones or pebbles of sand-stone; but when any of these stones are carried by the plow, or otherwise, on to these *enchanted spots*, they in a short time crumble and fall into mere sand.

PROFUSION OF WEALTH.—The Mexican churches, according to recent reports, are as profusely furnished with massive gold and precious stones, as if these were the principal objects of worship. In the cathedral of *Puebla de los Angelos* hangs a chandelier of gold and silver of several tons weight. On the right of the altar stands a carved figure of the Virgin, on the neck of which is suspended a row of precious pearls,—a coronet of pure gold encircles her brow, and on her waist is a girdle of enormous brilliants. Several candelebras are of silver and gold too massive to be raised by the strongest hand. In the Mexican cathedral is a railing of exquisite workmanship, five feet high, and 200 feet in length, all of solid gold and silver; and on this stands a virgin figure, which, with its costume and ornaments, is valued at $3,000,000. In the churches of Gaudaloupe and Loretto, the decorations are still more expensive and extravagant. One hundred millions of dollars are thus locked up in church ornaments, notwithstanding the extreme poverty of the great mass of the population.

MECHANICS!—Allow not yourselves to be discouraged,—let your motto be *onward*, and rush through every obstacle which a frowning fortune may throw in your path. Accomplish everything which you undertake, but undertake nothing which an enlightened conscience will not approve. Honesty will procure what wealth, fame or knowledge cannot without it,—happiness!—and if your purpose is to fill the station with honor, which a kind providence has marked out for you,—never despair if occasionally the clouds of adversity lower over your heads, and your lot appears cast with gloom. Though humble your station, forget not your duty to the world, to your country, to your homes, to yourselves. Life is made up of small items, and every item adds to or detracts from the world's welfare. The humblest man in the universe, exerts an influence, for good or evil, which will tell throughout eternity, and hence the importance of purity of purpose, and integrity of conduct.

Be sure you are right, then go ahead,' is a maxim which contains more wisdom and rational meaning, than its enterprising author,—Crockett—was probably aware of: and may be adopted as a rule of life by all honest and industrious mechanics.

ORIGINAL AND SELECTED.—Under this head we are accustomed to find odd varieties of paragraphs in various newspapers, but we have never seen this title more appropriately applied than appeared in one of our exchanges last week, in which, under this head were arrayed *nineteen* paragraphs, (not one less, 'pon honor) all *selected* from the Scientific American, in which they had been *original*. This is all right; we do not complain, but are pleased to find our articles so well appreciated; though we should not have been surprised if Mr. *Cullwell* had credited at least one of the nineteen, to the paper from which they were selected.

A GREAT POUND OF PORK.—The public pound, or hog-prison, in Cincinnati, recently contained at one time no less than one hundred and twenty-eight porkers, which had been found running at large in the streets of that city, contrary to 'law and order,' and advertised in one of the papers.

The beautiful representation of an improved winding apparatus which we this week present, is from Gilroy's "Art of Weaving," an exceedingly valuable work, published by G. D. Baldwin, No. 35 Spruce st., N. Y.

# IMPROVED WINDING MACHINE.

Fig 116

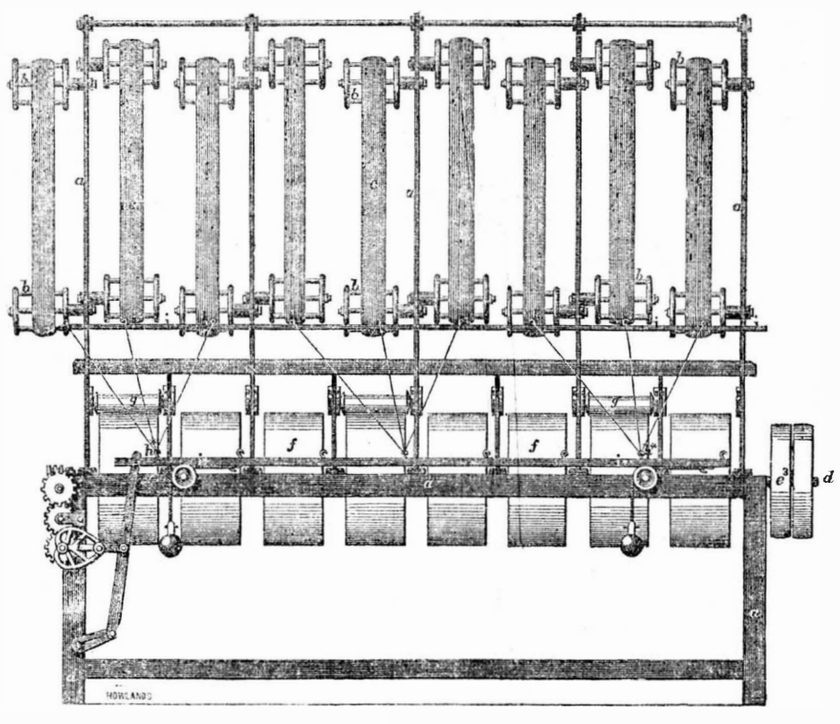
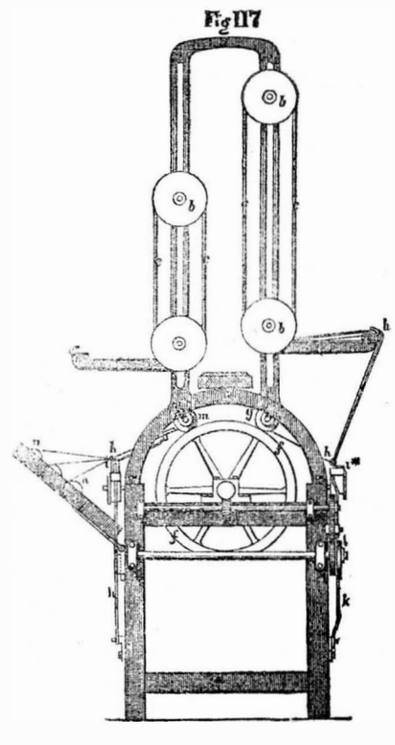


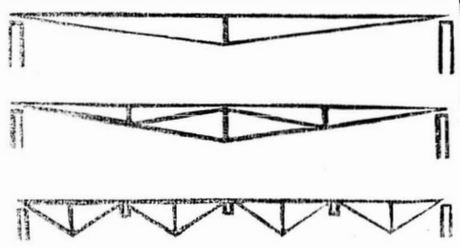
Fig 117



EXPLANATION.—Fig. 116 represents a front elevation, and fig. 117 is an end view. This machine is used for doubling from hanks or skeins or separate bobbins, in the process of the carpet manufacture. The machine consists of a slight frame. a a a a, the upper part of which supports the reels, b b b, containing the hanks of yarn, c c c. The lower part of the framing supports the driving shaft, d d, upon which is keyed the pulley to which the driving power is applied. Upon this shaft, d, a series of wooden drums, f f f, are also mounted, which revolve with it and drive, by friction of contact, the bobbins, g g. The yarns or hanks, c c c, two, three, or more of them are brought together and passed through the eyes in the stationary guide rail, i i, thence through the eyes or hooks, h* h*, on the traversing guide rail. These threads are then wound upon one of the bobbins, g, side by side, so that the two, three or more will readily unwind from the bobbin at the same speed, and thus always preserve an uniformity of length and tension. The guide rails i* are traversed to and fro, in order to lay the yarn evenly upon the face of the bobbins, by means of the lever, k, being moved by the heart cam, l, geered with the other end of the driving shaft. This explanation will be understood by those who are conversant with such business, and to whom only this subject is expected to be particularly interesting.

## Science of Mechanics.

(Continued from No. 42.)



IRON FLOORS.—The cohesive strength of a bar of wrought iron one inch square, is equal to 76,400 lbs. If such a bar be firmly confined in such a manner that one end thereof may project horizontally one foot from the place that is held fast, the projecting end will sustain a weight of 3,184 lbs., or one 24th part of the cohesive strength of the bar. If a bar, a little more than one foot long be so placed as to rest on two bearings one foot apart, the bar extending horizontally from one bearing to the other, the middle of the bar will sustain a weight of 6,368 lbs. If the whole cohesive strength was at the lower surface of the bar, it would sustain double this weight, but as the power of resistance to the pressure is very little for want of leverage near the upper surface, only 1-12 part of the full strength of the bar can be exerted in a vertical direction. If the bar extends two feet between its bearings, it will sustain but 3,184 lbs. on its centre: if it extends eight feet, it will support 7,86 lb.; or 393 lbs. of its length be 16 feet. Now if a post extend downward one foot from the centre of this bar, and another equal bar being firmly attached to the first bar at each end, passes under the bottom of the post,—as represented in fig. 1,—the centre will support a weight of nearly 10,000 lbs, yet the weight of both bars will be but 128 lbs., and will of course cost only six dollars. But as this first bar may requires support between the centre and the end, it will be requisite to place two other posts between the centre posts and the ends of the bars, and to attach a small flat brace to the second bar, at the foot of each short post, and let the brace pass over the head of the centre post,—as represented in fig. 2; this brace with the posts will raise the cost to about eight dollars. It is proposed that such an arrangement of bars and braces, should constitute a main beam, to support the floor of a store, ware-house, or factory. These beams may be placed four feet apart, and be crossed by small bars of half an inch square with similar braces: the small beams would appear as represented in fig. 3. These small beams should be one foot apart, and being each 16 feet long, would weigh about 32 lbs., and cost about one dollar and 50 cents each. Over these may be laid plate iron, (No. 16.,) the weight of which is about three lbs. per square foot, and the cost six cents per lb. Thus it appears that the cost of an iron floor 16 feet square and strong enough to sustain 10,000 lbs., may be constructed for less than one hundred dollars. Were iron floors adopted generally in the city, the prices of insurance might be reduced to one-fourth of what it now is, and the fire department would have but little business, comparatively, and our citizens would generally rest more secure.

THE SANTA FE EXPEDITION.—Recent arrivals from Fort Leavenworth represent that 1000 to 1200 men were there encamped, and in daily expectation of orders to march toward Santa Fe. With regard to the destination of this force, or the plan of its operation, but little is known at present; but there is no doubt that it is on the move, and we may expect to hear something interesting from that direction in a few days.

A DROLL MISTAKE.—A cotemporary recently placed a list of Marriages under the head of "causes of war." He subsequently apologized for the error, but maintains that the reading was correct in its main principles, nevertheless.

## Curious Arts.

A CHEAP IMITATION OF SILVER BRONZE.—Put into a crucible, an ounce of pure tin, and set it on a fire to melt; when it begins to melt, add to it an equal quantity of bismuth, and stir the mixture with an iron rod till the whole is entirely melted and incorporated. Take the crucible then from the fire, and after the melted composition has become a little cooler, but while it is yet in a fluid state, pour into it gradually, an ounce of mercury, stirring it at the same time, that the mercury may be thoroughly conjoined with the other ingredients. When the whole is thus commixed, pour the mass out of the crucible on a stone, where, as it cools, it will take the form of an amalgam, or metallic paste, which will be easily bruised into a flaky powder, and may then be applied to size figures in the manner of gold or silver bronze, or may be tempered with gum water, and applied to the work with a brush or camel hair pencil; and if properly secured with varnish or laquers, will be even more durable than either silver leaf or silver bronze.

TO PREPARE AN IMITATION OF GOLD BRONZE.—Melt two ounces of tin, and mix with it one ounce of mercury; when this is cold, pulverize it, and add one ounce of muriate of ammonia, and one ounce of sulphur, and grind them all together. Put the compound in a flask, and heat it in a clear fire (carefully avoiding the fumes) till the mercury sublimes and rises in vapor. When the vapor ceases to rise, take the glass from the fire. A flaky gold colored powder will remain in the flask, which may be applied in the manner of gold bronze, of which it is a tolerable imitation.

ORNAMENTAL MARBLE.—A method of finishing and ornamenting marble is practised in Paris and other places in France. It consists in etching, by acids, deeply in the marble, various designs upon a properly prepared bituminous ground. When the corrosion has gone sufficiently deep, the cavities are filled up with hard colored wax, prepared so as to take a polish equal to the marble when cleaned off. Drawings thus made on black marble, and filled in with scarlet wax, after the manner of Etruscan and certain Egyptian designs, are said to have a very noble effect, and are applied to tables, panelling, stoves, &c. The invention is worthy of the attention of marble workers in this country.

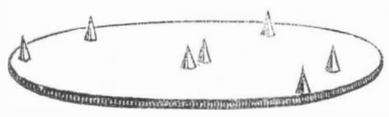
TO TIN COPPER BY BOILING.—Boil half a pound of granulated tin, and six ounces of super tartrate of potass in three pints of water; when they have boiled half an hour, put in any piece of copper ware, and continue boiling fifteen minutes longer. The copper may then be taken out, and will have been handsomely coated with tin.

DR. THEODORE INGALLS.—We observe with some little interest—from the circumstance of having been a schoolmate with him in our young days—this gentleman's name among the candidates for Governor of Maine. Dr. Ingalls is the son of a plain farmer, (one of the first settlers of Bridgeton where this gentleman still resides) and had but little advantage of education. But by a straight forward attention to self improvement and general usefulness, with the aid of a brilliant natural genius, he has obtained a high station in the esteem of his personal acquaintance, and a good share of the confidence of the public.

A GREAT STEAMBOAT ENTERPRIZE.—Vespasian Ellis, Esq., formerly U. S. Charge at Carraccas, has obtained from the Government of Venezuela the exclusive right of navigating the Oronoco, with steam vessels, for twenty-two years, on terms highly advantageous. This river, according to Darby, is about 15,000 miles in length, and the area of the basin drained by it is 400,000 square miles. There are few rivers in the world which afford a more extended and less interrupted navigation.

A PROSPEROUS SEASON.—We hear reports of the abundance of fruits, and prospect of abundant harvest, in all parts of the world: and there is also a general prevalence of health.

## Dancing Cones.



A lady in Falmouth, was struck with astonishment and wonder, the other day, on returning to the parlor after a few minutes absence, and observing a number of little paper cones of various colors dancing and capering about the centre table. They would sometimes come in contact with each other, and would instantly make mutual retrogade movements; and when any of them approached the edge of the table, instead of falling off they would quickly change their directions to other quarters. While gazing in amazement, she heard the tittering of little Tommy, who had secreted himself behind the door, and was watching alternately the countenance of mamma and the animated cones. She approached the table, and lifting one of the cones, discovered that little Tommy had placed for safe keeping a live beetle of the small and lively kind, under each cone. The cones were about an inch high.

CONNECTICUT ORTHOGRAPHY.—It was reported two or three years since that there was only one man in the State of Connecticut, that could neither read nor write: but spelling correctly is probably thought to be of little consequence. The following recipe,—evidently intended to show the composition of liquid carmine—was lately picken up in Waterbury: "Won ownce of coachaneel. Won ownce of cream atarter, too ownces of selucian of tin." The proportion of ingredients in this recipe are correct, but the writer should have added that the coachaneel and cream atarter are to bee biled together haf an our and straned, and when coald ad the selucian of (ox a mewreate) of tin, &c.

A WONDERFUL BIRD.—A gentleman writing from Herkaree, mentions as a fact that a bird has been for some time exhibiting in Calcutta, which 'astonishes the natives,' as well it may. It is furnished with a little brass cannon into which the keeper puts a charge of powder, which the bird rams down with a stick, and proceeds to put in a piece of rag or paper for wadding, and after this a bullet. It then goes to its master for a lighted match which it immediately applies to the priming discharging the gun with a loud report, while the bird stands firm till called away by its master.

WHAT POLICY.—The Newburyport Herald, on the subject of the new tariff, consoles itself and readers with the prospect that the principal effect thereof will be to break down the small manufacturing establishments, and check the progress of manufacturing enterprise in the South and West, thus throwing a sufficient monopoly of the business into the hands of the wealthy companies, to balance the injury by foreign competition. Some of the violent free trade Southern politicians may probably discover that they have been cutting off their own noses by this move.

SMITH'S ELECTRO MAGNETIC MACHINES.—We have examined some of these machines, and find them decidedly superior to any thing of the kind for giving shocks. In addition to the ordinary properties of similar machines, they embrace a new and wonderful principle, which the inventor terms the *Torpedo* principle, whereby powerful shocks are communicated from any part of the apparatus,—even from the sides of the battery. They are scientific curiosities, and our scientific readers will do well to call and examine them at the rooms of the inventor, Dr. S. B. Smith, 297½ Broadway.

P. S. A specimen may be seen at this office.

GUM PASTE.—It is convenient, always to have on hand some kind of paste for paper. A thick solution of gum Arabic, is commonly made use of, kept in a phial or bottle. Gum Arabic with water remains pure, and we should suppose this other gum would also keep unchanged. It is likewise a good cement, where it is not to come in contact with any liquid.

## VARIETY

An exchange paper recommends that the volunteers for the war lay aside their guns and bullets, and arm themselves with bottles of spruce beer, to be kept in readiness to cut the strings and let the stopples fly; thus opposing froth to froth.

A German in Philadelphia recently sued another German for the sum of five dollars, which he had charged for introducing to the defendant a young lady whom he had subsequently married. Judgment was given for the plaintiff.

It is stated in the Janesville Gazette that no less than *sixty-nine* of the most flourishing villages in Wisconsin Territory, have been erected within the last six years; and 44 of them within four years.

The 'London Daily News,' a half-price (4 cts.) newspaper was commenced about the first of June, and snceeeds so well that the publishers find it difficult to get the editions out in season.

The water in the Detroit river commenced rising in 1824, and continued to rise till 1838, since which time it has been gradually falling, and is now nearly as low as in '23.

The new Portsmouth, N. H., steam factory has commenced spinning No. 81 yarns; a number much finer than has hitherto been made in this country. This mill runs 21,000 spindles.

A sailor beloning to Newburyport, was seriously injured a few weeks since, by falling out of bed.—He was on board a schooner at Jamaica, and had gone up to the cross-trees to sleep.

A specimen of century plant is now in full blossom at the city gardens west of the Common in Boston. It is a rare curiosity and is honored by great numbers of visitors.

The 4th was celebrated in Portland, Me., by the ceremonious 'breaking of ground,' by Governor Anderson and Judge Preble, for the Portland and Montreal Railroad. About 10,000 people were present.

The receipts of Van Amburg and Co's exhibition at Boston during the week ending on the 4th inst., was $7,700. Nearly $4000 was taken on the 4th. Some of the animals got much fatigued.

The weather on Friday, Saturday, and Sunday last was warmer than had ever been measured in this city by the oldest thermometer. The mercury ranged from 93 to 100 degrees.

The mass of solid copper discovered by the Eagle Harbor Company is ascertained to extend at least 90 feet in length. The company propose to employ a steam engine to cut it up into wagon loads.

The citizens of Albany have been making rather a spirited movement on account of the 200 licenses granted by the Mayor, contrary to the vote of a large majority of the people.

A lady being asked how she liked the appearance of the natural bridge in Virginia, which she had recently visited, replied that "she thought it would be a very nice bridge when finished."

A gentleman was remarking in the presence of some rustics, the other day, that the Indians had no "w" in their language. "How then," enquired one of them, "do they manage to spell *wagon*?"

Somebody says that the idea of clothing one's self in his own virtue, suggests a lively notion of a Georgian's summer costume, viz.: a shirt-collar and a pair of spurs.

About 400 slaves manumitted by the will of John Randolph, of Roanoake, arrived at Cincinnati on the 2d inst., on their way to the colony of colored people in Mercer County, Ohio.

The ships Hannah Sprague and Ilzaide lately arrived at London: the former with 600 tons, and the latter with 664 tons of ice from the fresh ponds near Boston.

We are informed that the grading and working on the entire line of railroad from St. Petersburg to Warsaw,—140 miles, and amounting to $4,500,000—has been given to American contractors.

The first news-boy in Metamoras, a lad about 60 years old, recently appeared with the new paper, and commenced the cry, '*here is de Republica de Rio Grandy amiga de los pueblo* neu papier.

It is said that the citizens of Cincinnati always use the word *grunt* for 'grant.' This is supposed to be occasioned by the constant association of a large portion of their population, with the swinish gentry.

A London newspaper informs its readers that an additional number of sentinels are to be placed in Hyde Park to prevent the frequent robberies which *occurred last Winter*.

Among the Indiana volunteers was a young woman who for the sake of joining her father, assumed male apparel, and entered the ranks. Her sex being discovered, she was compelled to return.

Charles Spear of Boston is at the head of an association for the relief of discharged convicts, and has prepared accommodations for them at his own house, till they can find employment.

A party of ladies visiting the Philadelphia Navy Yard, were much disconcerted by the appearance of a quantity of naked white oak knees. The commandant ordered some old sails to be thrown over them.

The illustrations for the continuation of the subject of Phonography were not quite ready when our paper went to press; we shall do justice to the subject in our next.

The editor of a Southern paper avers that while walking in his garden one morning, he saw a toad of ordinary size catch and devour a full-grown mouse. He is "sure it was a toad."

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## The Press.

Oh ! the wondrous Press has a magic sway
In its great and giant force,
To the east and west it bends its way,
And it takes o'er the seas its course;
Gay dazzling stores may the good ship fill,
In the pride of vain excess,
But it boasts a treasure more precious still,
In the wealth of the mighty Press.

The son of genius, unsought, unknown,
May his heaven-born theme pursue,
Their brightness gladdens himself alone,
For his friends are far and few.
But see, in the ranks of fame he stands,
Lo ! thousands his lays possess,
And his name is blazoned in distant lands,
Through the aid of the mighty Press.

The poet's numbers, the scholar's lore,
Cast their radiant spell o'er all;
Those strains are conned in the cottage door
That enchant the lofdly hall;
And the Book more holy than all beside,
Which alone can truly bless,
To the heathen shines as a lamb and guide,
By the power of the mighty Press.

Alas ! that a scene so bright, so clear,
Should a dark reverse disclose;
Alas ! that a boon so great, so dear,
Should be ever linked with woes;
But the lawless doctrines of men profane,
To the world their guile address,
Proving to thousands a snare and bane,
Through the sway of the mighty Press.

Yet the summer sky has its wintry doom,
And the rose reveals a thorn,
And evil must ever mix with good
In a race to evil born;
We must bear the pangs of a thwarted will
Where we fondly hoped success,
We must sigh o'er the mass of social ill,
Diffused by the mighty Press.

Yet the light of Faith let us humbly seek]
To illume our dangerous road,
Let us deem all knowledge poor and weak
That would lead our hearts from God;
Then may we welcome Instruction's tide,
As it flows our land to bless,
And greet with unmingled joy and pride
The gift of our glorious Press.

## The Wife's Appeal.

You took me, William, when a girl,
Unto your home and heart,
To bear in all your after life
A fond and faithful part;
And tell me, have I ever tried
That duty to forego,
Or grieved because I had no joy,
When you were sunk in wo ?

No—I would rather share your tears
Than any other's glee,
For though you're nothing to the world,
You're all the world to me;—
You make a palace of my shed,
This rough hewn bench a throne;
There's light for me in all your smiles,
And music in your tone.

I look upon you when you sleep,
My eyes with tears grow dim;
I cry, "O Parent of the poor,
Look down from heaven on him;
Behold him toil from day to day,
Exhausting strength and soul;
Oh ! look in mercy on him, Lord,
For thou can'st make him whole."

And when at last relieving sleep
Has on my eyelids smiled,
How oft are they forbid to close
In slumber by our child ?
I take the little murmurer
That spoils my span of rest,
And feel it as a part of thee
I lull upon my breast.

There's only one return I crave,
I may not need it long;
And it may soothe thee when I'm where
The wretched feel no wrong;
I ask not for a kinder tone,
For thou wert ever kind:
I ask not for less frugal fare,
My fare I do not mind.

I ask not for attire more gay,
If such as I have got
Suffice to make me fair to thee,
For more I murmur not;
But I would ask some of the hours,
That you on "club" bestow,—
Of knowledge which you prize so much,
May I not something know ?

Subtract from meeting among men,
Each eve an hour for me;
Make me companion of your soul,
As I may safely be:
If you will read, I'll sit and work,
Then think when you're away;
Less tedious I shall find the time,
Dear William, if you stay.

A meet companion soon I'll be
For your most tedious hours;
And teacher of those little ones
You call our cottage flowers !
And if we be not rich and great,
We may be wise and kind;
And as my heart can warm your heart,
So may your mind my mind.

CASTING INTEREST.—Multiply the principal by the number of days, and divide the product by the rate of interest: the quotient will be the answer in cents.

## Selected Articles.

FIRST RATE.—Extract of a temperance lecture by Mr. Smith the "Razor Strop Man :"

When I was a drunkard not only was my wife and myself half starved, but my old cat was also reduced to a perfect skeleton. And not only that but she grew wicked and became an out-and-out old thief. 'Cause why? Why because she couldn't get enough to eat at home, so she went prowling and stealing among the neighbors. Every once-in-a-while, I'd hear the neighbors cry out, "cuss that Smith's cat, she's stole my fish : and cuss that Smith's cat, she's stole my meat, and cuss that Smith's cat, she's drank up all my milk." But why didn't she stay at home and catch mice and live on them, says you. Reason enough, says I, for our mice couldn't get crumbs of meat and bread like a sober man's mice can, so they had to live on the recollection of what they used to eat before their master was a drunkard, and at last they got so thin and scraggy, that fifty of them wouldn't give the old cat a breakfast. But when I reformed things took a different turn. Smith's table had plenty of fish and plenty of meat on it, and Smith's mice had plenty of crumbs and grew nicely, and Smith's cat had plenty of mice, and didn't have to steal the neighbor's meat and fish any more. No *sir*, my mice were fat and plump, and my old cat was spry and active, and it didn't take fifty mice to make a meal *nuther*. No sir-ee. The old cat would just catch two mice, and these two were as much as she could eat at one meal; and when she had eat them, she'd lie down and go to sleep, and after a good night's rest, she'd wake up in the morning with the pleasing satisfaction of knowing that the nice, fat, plump mice were not all gone, but that there "*were a few more left of the same sort.*"

ENGLISH RAILWAYS.—We have obtained returns from about 300 miles of railways now under construction, and we find that on them there are now employed 29,000 men and 3,000 horses. This amount comprehends one-fourth only of the lines now in progress of construction: therefore, we may assume 120,000 men and 12,000 horses as the total number employed. The wages paid for these men and horses is £500,000 per week, or £26,000,000 per annum, directly expended on railway wages. This amount consists of wages merely for men directly employed on the line. Half as much again is expended *indirectly* on labor, preparing rails, chairs, stock, etc., for the line, and on land and other materials as much more. We have stated that on 300 miles we have returns of 29,000 men and 3,000 horses employed. But this is not the proper quantity required for the labor. We have before us the engineer's returns, by which we find that they require. in order to complete the works in time, an additional supply of nearly 20,000 or that 48,000 men and 5,000 horses is the proper number that should be employed. Moreover we find that these additional men must be had in order to do the work already stipulated. These additional men cannot be obtained, and the very attempt to obtain them would merely have the effect of enhancing the cost of the present hands without materially increasing the supply. We see, therefore, that the present supply of hands is deficient—that any attempt to increase the supply would fail, because it would enhance prices beyond all possibility of profitable investment. We do not believe, as an eminent engineer has stated, that present prices are 50 per cent. dearer than this time last year. That is an exaggeration. Prices are however kept down only by the wisdom which has hitherto moderated the demand to the means of supply. Let us have an injudicious increase of demand, and prices will at once become preposterous.—*Railway Chron.*

THE AURORA BOREALIS.—Many and various have been the conjectures of philosophers, with regard to the nature, and direct cause of the luminous appearance in the heavens, usually termed the 'Northern Light,' but more scientifically the Aurora Borealis; yet few, if any of the many explanations offered, have been satisfactory to those who have been accustomed to give attention to the subject. We make no pretensions to *meteoric* science, if a science it be; but we shall hazard a conjecture on this subject, for the consideration of those who have regard to rational probability.

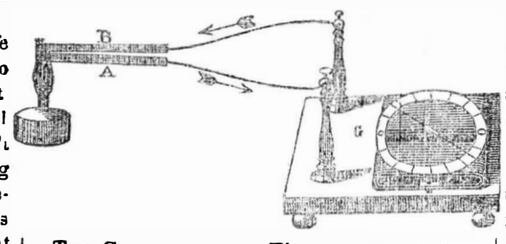
It is well known that our ordinary transparent atmosphere, is capable of reflecting the sun's rays to an extent more luminous than the brightest aurora borealis; for it is this reflection which constitutes the *day light* prior to the appearance of the morning sun. It is moreover well known that the surfaces of gaseous fluids, are capable of refracting rays of light, in a manner similar to the surface of the aqueous fluid. It is also generally admitted as a rational conclusion, that the upper surface of our atmosphere, rolls in bold undulation occasionally according to the directions of the various currents thereof. Now then, to account fully for the luminous appearances and the motion and changeability thereof, we have only to suppose that in consequence of occasional extraordinary agitation of the upper surface of the atmosphere, the sun's rays are refracted from billow to billow, till they arrive in our hemisphere, where they amuse us by their fantastic manœuvres.

FRICTION PASTE FOR WHEELS.—The best composition that can be prepared, to relieve carriage wheels and machinery from friction, is composed of hog's lard, wheat flour, and black lead (plumbago.) The lard is to be melted over a gentle fire, and the other ingredients—equal in weight—may be added, till the composition is brought to a consistency of common paste, without raising the heat, near the boiling point. One trial of this paste, will satisfy any one, of its superior utility.

A BIG GUN.—The largest gun in the world was cast at Algers' Foundry, South Boston, on Wednesday of last week. The quantity of metal required for the casting was 46,000 lbs., and the gun when finished will weigh about 22,000 lbs., and will carry a ball weighing 320 lbs. It is intended for Fort George, in Boston Harbor.

## Thermo-Electricity.

Continued from No. 41.




THE GALVANOMETER.—The quantity and direction of a current of thermo electricity, as well as of the galvanic fluid, is conspicuously indicated and accurately measured by means of an instrument denominated a Galvanometer. There are several modes of constructing instruments for this purpose, but none are more perfect than the one represented in the cut which heads this article. It consists of a small platform, G, on which is placed one or two flat coils of wire, the ends of which are connected to the two posts with binding screws. Over these flattened coils is placed a graduated circle, and a magnetic needle is mounted on a vertical pin in the centre thereof. The two binding-screwposts being connected by wires to two plates, B A, of different metals, and the point of contact of the two plates being subjected to the heat of a lamp, a current of electricity will be instantly produced, and will pass through the wire coils; and the needle will become deflected to the right or left, according to the direction of the current, and to a greater or less extent according to the quantity of the fluid passing through the wire coil. So sensitive is the needle in this instrument, that even the warmth produced by the application of a finger to one of the plates, or merely breathing on it, will induce a sufficient quantity of electricity to produce a sensible deflection of the needle. The application of a piece of ice or snow to the junction of the plates, will also produce deflection, but in the contrary direction to that produced by heat. It may be observed as an invariable law, that when a magnetic needle is placed contiguous to a wire conveying a current of electricity, the needle will evince a tendency to assume a position at right angles to that of the wire. If the needle is placed above the wire, as in this instrument, and the direction of the current in the upper part of the coil, is from south to north, the north pole of the needle will be deflected to the east; and *vice versa*. But if the needle be placed below the conducting wire, within the coil, so that the direction of the current above the needle may be from south to north, the north pole of the needle will be deflected to the west. Thus the direction as well as the quantity or strength of the electric current, induced in the course of a series of experiments, are plainly indicated; and by means of the galvanometer it has been ascertained that of all the metals, the combination of a plate of silver, with one of antimony, in a thermo-electric battery, is the most powerful. The compound, known as German silver, is proved, however, to be equal to real silver for this purpose. We have shown, in a former number, the several modes of producing currents of thermo electricity, by the application of either heat or cold to the metalic plates; and we may add that very curious and wonderful phenomena may be produced by reversing the process and passing a current of galvanic electricity through a therme battery. By this experiment the combined plates become heated at the junction by the passing of the current in one direction, but by reversing the current a sensible degree of cold is produced. The experiments on this subject have been few and limited, but it is possible that by a judicious arrangement of plates of different metals, the temperature of certain sections might be reduced below the freezing point, and that ice may yet be produced by electricity.

THE APPEARANCE OF THE EARTH FROM A HEIGHT.—To a person who has obtained an elevation of 2000 feet by a balloon, the earth appears like an immense concave map, painted different colors, which designate, not the different townships or counties, as the coloring of maps generally do, but the various products of the soil. That the earth, which in reality is convex, should appear to be concave, may at first seem strange to meny, but a moment's reflection will render it clear. His horizon is frequently upwards of a hundred miles from him.—Draw a right angled triangle, and make the base line fifty or sixty times as long as the perpendicular, the hypothenuse and base will then be nearly in the same line. The horizon appears to the æronaut, to be on a perfect level with the car of the balloon; but the part of the earth directly underneath him, seems at a great distance from him, consequently, the whole surface of his scene must appear concave.

BAD EFFECT OF MONEY.—A benevolent Franciscan friar was in charity, carrying an old man over a river, and when in the deepest part, the old man's feet began to be immersed in the water.—'Carry me a little higher,' said the old man, 'and I will give you three pence when we get over.'—'Have you got any money?' quickly enquired the friar. 'Yes, a very little,' replied the old man—'Then I must not carry you,' said the Franciscan, 'for we are forbid by our order to carry any money.' So he chucked him into the river.

CURIOUS.—A Baltimore paper speaks of a rose bush which presents the singular phenomenon of white roses and red, budding out of the same stem. We know not why this should be considered very wonderful, since it is well known that rose bushes are easily engrafted on to other stocks. We rather wonder that there is so little attention paid to this subject, and that we so seldom see a variety of roses growing on the same bush.

A LARGE PARTY AND MERRY COMPANY.—A single train of cars on the Fitchburg railroad, took from Boston, on Saturday evening, upwards of *three thousand passengers*. It consisted of thirty-eight cars and three engines. This was unquestionably the largest party ever drawn by one team.

For the Scientific American.

## Geological Gleanings in Mississippi.

In taking a general survey of the State of Mississippi, several prominent features are presented, which have suggested four grand divisions of its area as described by our geograpers. These are, the Islands on the seaboard, or on lake Borgne; the Pine Forests; the River Alluvium; and the Mississippi bluffs. To these must be added another important and extensive division :—the Prairie region. The first is of very limited extent, consisting of a chain of islands, ranging some six or seven miles from the main shore, which are described as low, sandy, and sterile. The pine forest commences immediately on the sea-board, with a slight margin of live oak, sparsely interspersed near the water's edge, presenting a very flat surface, and being, to a considerable extent during the winter rains, of a wet, miry nature, the timber being generally rather inferior in size, but closely set. Extending northwardly into the interior, above the former limits of West Florida, the surface becomes higher, more undulating, and occasionally quite broken.—Here the timber becomes larger, and over extensive tracts the long-leaf pine usurps almost exclusive dominion. Straight, massive, and branchless to near the top, which seems to spread a canopy in the blue ether of the skies, there is a grandeur and majesty in these trees, peculiar to such forests alone. Far removed from human habitation, on every side an interminable vista of towering columns is presented, broken by no moving object, or sign of living thing; whilst the gentle breathing of the winds through the pinated foliage of the lofty canopy, comes down upon the ear like the distant moaning of a gathering storm, filling the lonely traveller with a sense of solitude almost oppressive. These forests are occasionally diversified by reed glades, or *brakes*, as they are familiarly termed, a species of meadow, destitute of timber, but densely covered with reeds about ten feet high, through which spreads out a sheet of running water, but matted over and concealed in a great measure by the closely interlaced, turf-like rootlets of the reed, forming in their decay, a species of peat bog.

The recent, or river alluvium, commences near the southern boundary of the state, a short distance above Loftus Heights, or Fort Adams, forming a narrow bordering on the eastern margin of the Mississippi, extending upwards to the Walnut hills, near the mouth of the Yazoo, but broken or disconnected at several points, by the projection of the bluffs to the water's edge; branching eastwardly, however, into the interior to a greater or less extent, along the borders of the Homochetto, Bayou, Pierre, and Big Black. Extending above the Walnut hills in a wider range, it embraces a tract between the Yazoo and Mississippi, terminated, at the north-western corner of the state, by the Chickasaw bluffs, and intersected by numerous lakes and channels, among the most considerable of which are lake Washington, and lake Bolivar; Deer Creek, Sun-flower, and Cold-water. The lakes are former beds of the Mississippi, as are those borders of what known as the "Old River," at the mouths of the Yazoo and Homochetto rivers. At these latter points the change in the channel of the Mississippi, or the cut off, has taken place since the first settlement of the country by the French.

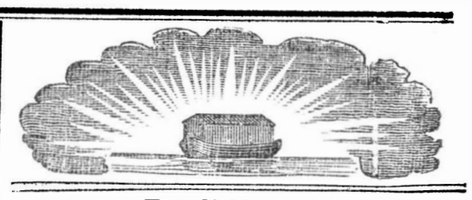
The Yazoo and ths and the Homochetto discharging themselves into the bends or portions disunited, the direction of the current has been changed, forming outlets through the upper portion of the ancient beds,—the lower ends, as is invariably the case, being entirely closed. Where the portion cut off by these changes receives no tributary, as is the case with the lakes mentioned, an entire separation takes places, both ends being closed by deposites formed by eddies, or counter-currents, resulting naturally from the change in the direction of the main current of the river. On the margin of these lakes and channels, as well as on the river itself, the land is considerably higher than in the rear, forming to some extent a rim or natural embankment.

Considerable portions of the lands thus situated are entirely reclaimed and in cultivation and possess the most exuberant fertility. The other portions subject to annual or occasional inundation receive heavy deposites of earthy matter, held in suspension in the waters at each successive overflow, and are becoming gradually elevated above the *ordinary* rise of the river.

The extraordinary flood of 1844, continuing for a period altogether unexampled, and kept up by the successive freshets of the Arkansas and upper rivers has effected a series of deposites of unusual extent. Similar formations of this character, but of much less extent and varying somewhat in the constituents of the soil, occur on the borders of Pearl River, the Tombigbee, and some other minor streams in the south-eastern portion of the State. These are less productive, of a colder nature, and to a considerable extent of that description known to farmers as cray-fish lands.

The Mississippi Bluffs or ancient alluvium constitute the most important and valuable, and, with the exception of the reclaimed and most favored portions of the last described formation, the most fertile portion of the State—possessing a deep loamy soil eminently adapted to the growth of all the productions of the South. The mean elevation is about two hundred feet above the high water mark of the Mississippi, and for an average of twelve or fifteen miles in breadth, was doubtless originally an elevated table land of nearly uniform surface, throughout the greater part of the range from Loftus Heights, northwardly to a considerable distance up the Yazoo. The surface, however, is now by no means level, being undulating throughout, and frequently excessively broken by numerous and deep hollows. This unevenness of surface is unlike that produced by ranges of hills, of unequal elevation, rising successively above each other; neither can it be attributed entirely to the process of denudation, but seems to have been occasioned in a great degree by the depressed portions having at some distant period, and by some powerful agency been sunken below the orlginal and common altitude.

(To be continued)



## The Millerites.

Continued from No. 42.

We shall proceed to show the mode of calculation, with the connections and combinations of facts, points, and circumstances, whereby these people make out so exactly the time for the fulfilment of the prophecies, in the occurrence of the grand event of all events, so often predicted in the prophetic scriptures: and to avoid the frequent reference to *them* and *their* opinions, shall present the leading argument as substantially expressed by themselves.

When our Lord was baptized, he commenced his ministry, saying, 'The time is fulfilled: repent and believe the gospel;' evidently implying that a time had been specifically appointed for this event. And in referring to the prophecies, the only place in which the time for his appearance is specified, is found in Daniel ix. 25, where it is written: 'Know therefore and understand, that from the going forth of the commandment to restore and to build Jerusalem, unto the Messiah the Prince, shall be seven weeks and three score and two weeks.' It was well understood by the Jews, and now by Christians, that *days* and *weeks* in the prophecies, implied years and sevens of years; therefore these sixty-nine weeks are rationally understood to be 483 years; and the correctness of this is confirmed by the historical fact that in 7 weeks, or 49 years, the streets and walls of Jerusalem were completed, according to the same prophecy. And it being abundantly evident that the 70 weeks mentioned in the 24th verse, and the 2300 days (years) mentioned in the 14th verse of the preceding chapter, are all connected, and have their commencement at the same time, it follows that if it can be ascertained in what year Christ was baptized, it may be known with equal certainty in what year the period of 2300 days will terminate, when the sanctuary (the earth) shall be cleansed, and the 'greatness of the kingdom under the whole heavens,' shall be given to the saints.

John the Baptist commenced baptizing in the 15th year of the reign of Tiberius Cæsar, (Luke iii. 1-3) which is proved to have been A. D. 28, by the following circumstances: The reign of Augustus Cæsar, the father of Tiberius, commenced from the battle of Actium, during which occurred the most remarkable eclipse of the sun on record, and which is shown by astronomical tables to have been Sept. 2d, B. C. 31. Augustus reigned within a few days of 44 years; and as the reign of Tiberius commenced on the death of Augustus, it must have been in August, A. D. 14: and this is also confirmed by the fact that during a brief revolt in the army on that occasion, the soldiers became terrified and subdued by the appearance of an eclipse of the moon, which is proved by astronomers to have occurred on the 19th of August, A. D. 14; and of course the 15th year of his reign must have commenced early in August A. D. 28. And as John had been sometime baptising prior to the baptism of Christ, this event could not have been earlier than A. D. 29. And it appears equally evident that this event could not have been later than that date, because it is stated (Luke iii. 23) that Jesus began to be about 30 years of age; and it is evident that he was born a year or more before the death of Herod, because Herod slew all the children of Bethlehem, from 'two years old and under, according to the time which he had diligently enquired of the wise men;' and the time of the death of Herod is proved to have been B. C. 1, from the circumstance that an eclipse of the moon is recorded to have occurred immediately before his death, and this is shown by the astronomical tables to have occurred on either January 8th, or December 28th B.C. 1. And this also corresponds with the statement of Josephus, that Herod reigned 30 years after the battle of Actium, before mentioned. Thus it is evident that Christ was *full* thirty years old as early as December A.D. 29. Counting back 483 years from this date, shows the year B. C. 455 to have been the time of the going forth of the *decree*, which was in the 7th year of the reign of Artaxerxes Longimanus, or Ahasuerus (Ezra vii. 13 and Est. ii. 16, 18,) and this also corresponds with the commencement of the vision of the 8th chapter of Daniel, when the Medo Persian empire was at its zenith of prosperity. Thus if we commence the 2300 days at this date, we find the termination thereof in A.D. 1846. And this also corresponds with the chronology of Hengstenburg, and several other popular chronologists and commentators. Another no less important period, the termination of which the Millerites endeavor to harmonize with that of the 2300 days, is the period of 1335 days mentioned Dan xii. 12, and which is to extend to the resurrection, when Daniel is to stand in his lot. This period, as also that of 1390 days, commences at the time of the taking away of the daily—continual or prevalent—abomination, (the word *sacrifice* is not in the original, but merely supplied, without any apparent reason, by the translators) and the setting up of the abomination that maketh desolate. This is understood to refer to the removal or suppression of the Pagan, and setting up of the Papal worship. Any person who reads with attention what is written in Daniel vii. 8, 20, 25; chap. viii. 10-12; and chapter xi. 31-37: 2d Thessalonians, ii. 3-10, Rev. xiii. 1-7, concerning this 'abomination of desolation,' and compares it with Gibbon's and other histories of Rome, can not but see to what power or institution this title most aptly applies. Thus contend these Millerites: and some of the historical evidence adduced to prove these facts, will be given in our next.

(To be continued.)

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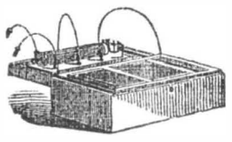

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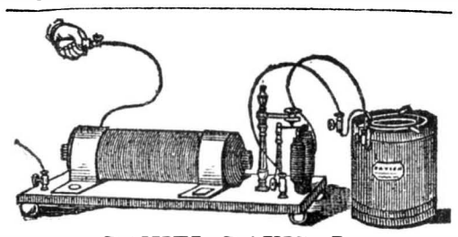

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From long practical experience in the business, and personal attention thereto, he is confident of being able to give general satisfaction to all who may favor him with their custom, and to execute all orders with promptness.

Charges moderate. A reasonable discount made for cash. feb. 11.

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Miniatures obtained at this establishment in superior style, for One Dollar and upwards, according to size and finish. Every picture shall give satisfaction.

N. B. Instruction given in the art, and the most improved apparatus, &c., furnished on as favorable terms as elsewhere. GEO. W. PROSCH. ma28

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Iron works of all descriptions, erected upon the most improved plans; steam or water powers.

Drawings, plans and estimates made for buildings, furnaces and machinery, and contracts for the whole or any part thereof taken and executed with promptness and despatch; and will also give his personal superintendence in the erection of iron works of all kinds, such as Rolling mills, blast furnaces—of hot and cold blasts—anthricite, bituminous, and charcoal or wood furnaces, forges, tripphammers; iron, brass, and bell foundry, pudling and heating furnaces, air cupolo chaffery and refinery, or let out furnaces.

N.B.—All letters directed, post-paid, to S. B. MERKEL, Founder-machinist, millwright, draughtsman and Engineer, Philadelphia. Pa. feb11.

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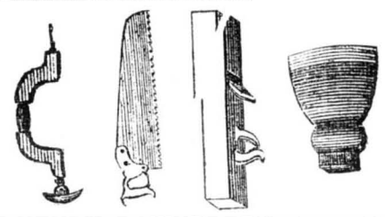

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H. R. feels obliged to his many customers, of every class, for their past patronage and hereby assures them that no pains shall be spared to procure the best articles in all variety.

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First rate Razors; Pen and Pocket Knives; Table Knives and Forks, &c.

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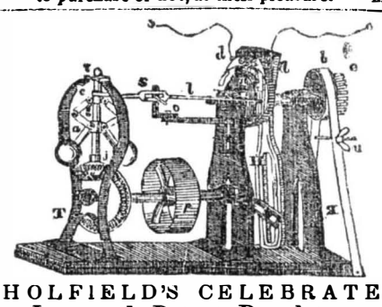

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## Improved Patent Regulator.

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They are built in a neat and compact form, and printed directions accompany each machine, which will enable any mechanic to put them in operation; as a general rule the different numbers are adapted to different sized wheels, as follows;

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The following agencies have been established for the sale of these machines:—Jones, Denney & Ward, Boston; V. J. Bates & Co., Providence, R. S; Charles Schenck, New York city; D. Wight & Lon, Troy, N. Y.; R.M. Vansickler, Albany, N.Y. S.C. Bemis, Springfield, Mass.; Denslow & Beach,; Hartford, Conn.; Joseph B. Hughes, Philadelphia; Wells Chase, and Towner Dunlap & Co.; Baltimore.

N. Scholfield also builds to order Bacon's Improved Pickers, a superior article for cotton or wool.

Norwich Conn., Feb. 14. f15eowtf.

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MARSHALL'S TROY SHIRT DEPOT.

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MARSHALL'S, 90 Chatham st., N.Y.

N.B.—Northern, Southern, Western and Eastern Merchants, who are making their purchases at the wholesale dry goods houses, will do well to inquire for goods of our manufacture, as it is sometimes the case, that other kinds are kept by them.

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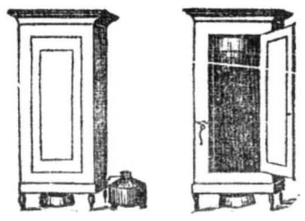

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Feb11tf.

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